ART • MUSIC • FOOD • PHILOSOPHY • WELLBEING • SCIENCE&NATURE • APPS&TECH • BOOKS • AND MORE!

ISSUE 53 FEBRUARY 2023

Brilliant Brainz

Creative learning and wellbeing for kids

THINK about WASTE

GROW veg from scraps

GET FIT for FREE

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Welcome

...to the FEBRUARY issue of Brilliant Brainz!

This month we are thinking about WASTE.

What have you thrown away today? A sweet wrapper? An old apple? A jumper you never wear? Now think about all the people in the world , throwing things away every day. This is why waste is a problem. We all need to think more carefully before we throw things away but also before we buy them in the first place. Turn to the Philosophy page to think about this some more.

Eleanor

NOTE TO PARENTS

This month's issue focuses on waste. We all know that we need to think more carefully about the waste we create and it's never too early to start! There's also lots of fun activities inside to help with that.. Using up the food we have in the fridge instead of chucking it, saves not just the food but the energy it took to make it, so we have included a great recipe for leftovers and some other good waste-saving ideas too.

Enjoy!

EDITORIAL

Editor: Eleanor Cole

Designers: Sandra Perry & Linda Storey

Illustrators: Richard Hoit

CONTRIBUTORS

Art: Art Atelier
Philosophy: Emma Leeson
Music: Eleanor Cole
Food: Michele Harper
Science/Nature: Elizabeth Thomsen
Sport: Wesley Forbes
Health: Lucy Miller
Wellbeing: Beth Parmar
Apps &Tech: Toby Starbuck

CONTACT US

brilliantbrainz.com

For editorial:
hello@brilliantbrainz.com

For customer service:
customer.support@brilliantbrainz.com

@BrilliantBrainzMag
@BBrainzMag
@BrilliantBrainzMag
hello@brilliantbrainz.com

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Building uses a huge amount of energy and creates waste. How can technology help with making the building trade less wasteful?

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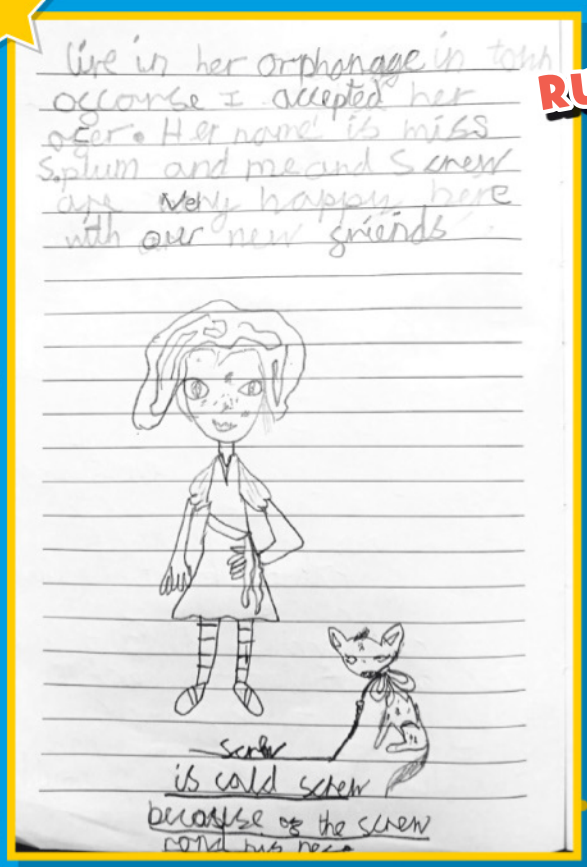
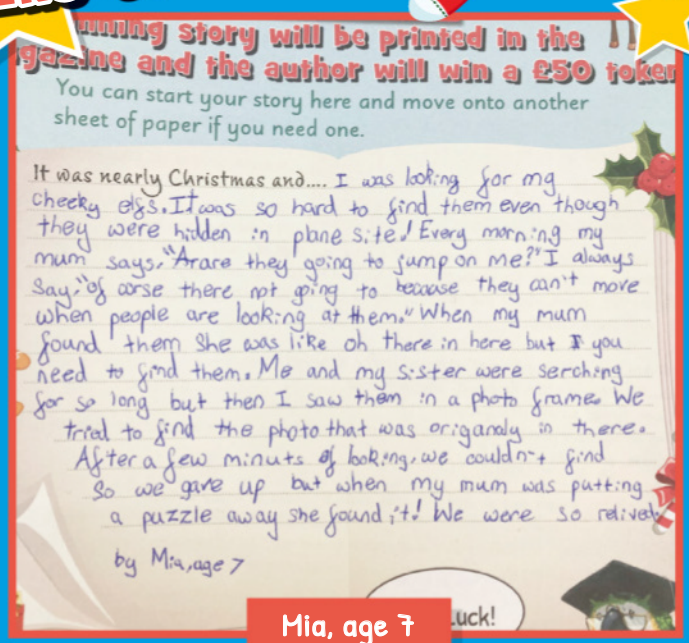
AND MORE!

We had so many great story competition entries that we decided to print two more. Well done to everyone who entered and if your story isn't here, don't worry, we will print more next month so you may see it then.

RUNNERS-UP



Opal, age 9



Mia, age 7

My Christmas was rather dull this year, but my New Year was very exciting. My name is Scat, I'm 10 and I live in London, my house is the street. Me and my cat, Screw get money by assisting the watertaxi. But back to my New Year. I was in the street by the big Christmas tree when one ornament the men were taking down caught my eye. The ornament was a sugar plum fairy, I saw it sprakle form a box and quickly I picked it up. Next thing I knew, I and Screw were in a world of Christmas wonder and joy!!!

Under a huge Christmas tree was a banquet fit for a queen. Suddenly I noticed my rags had been turned into a beautiful dress made of silk and Screw had a ribbon around his neck. I was invited to sit down by an old lady who looked just like the ornament form the tree. The meal I had was delcious. For a starter, we had pasta. For a main, patas bravas, my favourite, I learned it means 'brave potatoes' and for dessert, Turkish delight ice-cream. After the feast I knew we had to go. I was about to say goodbye, when the old lady said I could live in the orphange in town. Of course, I accepted her offer. Her name is Miss S. Plum and me and Screw are very happy here with our new friends.

Harriet, Freddie and Lucy

Thank You!

to all our readers who sent in their Christmas stories. Congratulations to Zuleyha for her wonderful story in the style of a diary - very original! And a big WELL DONE to Mia and Opal for their super stories too. **Squawk! Prof P**

CHRISTMAS STORY COMPETITION!

WINNER

SANTA CLAUS GETS CONFUSED

Sunday 25 December, Winter Holiday Camp

9: 30 am

Hi! My name is Tim, and I am at my holiday camp today. I am hoping I will get a bike from Santa. It shall be a red one with stripes. No, spots! No, I want a rainbow one! I just cannot decide! Oh, I forgot to tell you that today, at my holiday camp, we are going on a trip to Santa's Grotto and tell him what we want to get as a gift. As I said, I want to get a bike. I wonder if Santa Claus can ride a bike as well! Well, that would be funny, wouldn't it?

Anyway, there is no point in daydreaming if I want to get a gift from Santa. Oh, no, we have to go on the bus AGAIN! I hate going on the bus, which is so boring. Not just 'so', but SOO boring!

10: 30 am

We are here! Yippee! The annoying teachers keep on shouting at us to be quiet! We all go inside one by one, which of course, takes a really long time to wait. Finally, it is my turn to go inside!!! When I poke my head in, I can see Santa Claus waiting for me! I tell him I want a bike with stripes or spots, or a rainbow one. Then I step out the door of the wooden shed with golden, dazzling fairy lights. Suddenly, snow starts to fall!

Snow!!! I cannot believe this!

But why is Santa coming out of his Grotto looking worried?

I went over to him and asked what was wrong. He said that he couldn't remember which child would get which present. I tried to think and think. Then, my best friend had a brilliant idea! Santa Claus could use his elves!

Santa said it was a great idea and asked if I (yes, ME) could help Santa hand out the presents. Sunddenly, we were off, and even though I was not on a sleigh and apparently flying on top of a pigeon, it was still amazing and super fun!

00.00

After delivering all the presents, Santa Claus gave me an extraordinary gift! No stripes, spots or rainbows! But it was A FLYING BIKE! And I loved it!

By Zuleyha (Year 4)

We love hearing from YOU!

SNAP IT! FILM IT! EMAIL IT!

Want to be on the BB Letters page? It couldn't be easier. Send a letter, a photo, or a video to hello@brilliantbrainz.com. Turn to page 34 for details.

Pascale Marthine Tayou

Pascale Marthine Tayou is an artist from Cameroon, West Africa.

Born: 1966

His work mainly consists of large sculptural installations that are made from recycled waste materials such as plastic bags, or items collected on his global travels, such as train tickets, shop receipts, wrapping paper and batteries for example.

By using these materials his work questions world issues, like global waste and migration.

Abaca Press / Alamy Stock Photo

'Plastic Tree B' (2010)

Charlie J Ercilla / Alamy Stock Photo

Plastic bags and Trees

Pascale's 'Plastic bag tree' artworks are realistic-looking trees placed in art galleries. The branches are covered in brightly coloured plastic bags. They create a visual comparison between the natural and the man-made worlds.

The colourful trees remind us of the effects of increasing human consumption(using things up)and waste and the delicate relationship the modern world has with nature.

Waste Animals and Masks

Pascale's sculpture 'Africonda' is a giant twisted snake made from African household waste such as washcloths, wood, plastic, glass, consumer waste, and natural products such as dry hay and wood. The sculpture unites these waste products, and recycles them to create something new that is very striking and beautiful.

Tony Farrugia / Alamy Stock Photo

Africonda 2014

Mask

Masks and Rituals

He also created a series of figure sculptures and masks inspired by traditional wooden objects of his ancestors. They ook similar in shape but instead of being made from carved wood and nails, they are made from glass and covered with plastic fruit & veg wrapping, food labels, plastic bottles, beads, feathers and grass, creating a modern version of something traditional. They celebrate his African heritage whilst highlighting the problems of travel and consumption. **See how his sculptures compare to some traditional carved wooden masks and figures from Cameroon.**

Tayou: Totem Cristal

Toys and Gifts

Pascale Marthine Tayou's art also explores the waste involved in gift wrapping, and excess toys. *Empty Gift* is a giant ball of beautifully wrapped but empty boxes. His Poupée sculptures are strange glass figures covered in fancy dress items and soft toys. By creating something beautiful he is making things that we throw away into something permanent and asks the question: how much do we actually need?

Poupée Pascale, 2011

poupe_pascale, series 5

ANIMAL THEMED CONTAINERS

Recycle a plastic bottle and create a beautiful animal - themed container to use as a pen holder or plant pot. It is super easy, so why not make a collection? Like the artwork by Pascale Marthine Tayou, this art project uses materials that would otherwise end up as landfill.

Plastic is one of the biggest problem materials we must deal with. As 8 million tonnes of unwanted plastic ends up in the ocean each year!

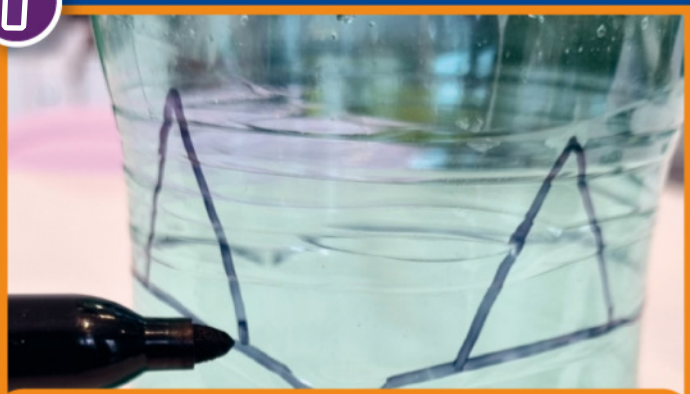
Before you start:

Find a used plastic bottle, this could be a fizzy drink or water bottle and make sure it is well rinsed out. Then choose the animal you would like to create. Animals that have easily recognisable markings and defined ears work best, like cats, birds, dogs, pigs, foxes, tigers, leopards.

YOU WILL NEED:

- A plastic bottle
- Scissors
- A pencil
- Acrylic paint
- A selection of brushes & a water jar
- Acrylic paint pens (optional)
- Craft materials such as googly eyes, feathers, and pom-poms (optional) & glue

1



Draw a line about half way up your bottle, and then add some ears in the shape of the animal you have chosen. Keep the shapes simple.

2

Carefully cut along the lines, taking particular care around the ears. Ask an adult for help if your bottle is difficult to cut.

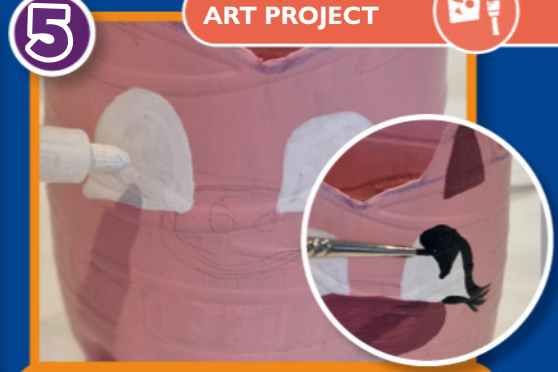
3

Paint the outside and inside of your bottle using acrylic paint. It will work best if your chosen colour is mixed with a little white to make it more opaque. If your bottle is dark like the one the one we used, you will need 2 layers. Let each layer dry in between coats.

4

Once the paint is dry, draw on some facial features with a pencil.

5

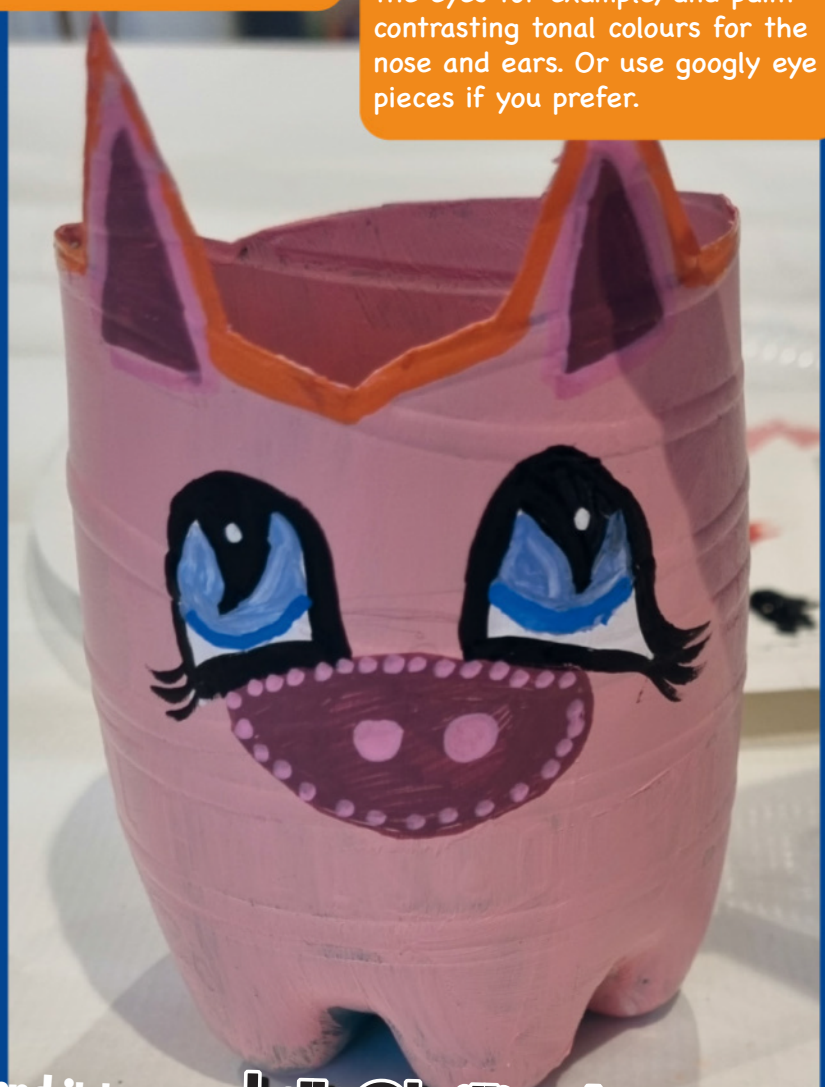


Add some detail to your animal face. Use acrylic paint pens, or a small brush and paint. Outline the eyes for example, and paint contrasting tonal colours for the nose and ears. Or use googly eye pieces if you prefer.

6

Add more detail and outlines to define your animals. The more detail you add, the more exciting your pots will look. Add some fabric, pom-poms or feathers if you wish.

When your pots are finished, put some of your stationary inside, or add a little soil and plant some seeds. Try making a collection of animals - they look great together.



Ask a grown-up to take a photo and send it to us at: hello@brilliantbrainz.com

Next month's ART PROJECT: make a BOOK CHARACTER 'WALL' HEAD

Make a 'wall' head of your favourite children's book character using recycled egg cartons and cardboard.

YOU WILL NEED:

- An egg box
- A small piece of cardboard
- Acrylic paint & brushes
- Craft materials such as fabric, beads, sequins and pom-poms
- A children's book with your favourite character in it.

WASTE

What can we waste? Time, money, energy, food, stuff... Have you wasted anything this week?

Some people may argue it is a waste of time(!) to think about stuff we have already wasted or don't need anymore, BUT what if we consider the **impact and effect** that our waste has – is that worth thinking about? Read on if you think it is...

This week I've wasted:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

As a starter for thinking, reflect on your waste, considering 3 questions – write or draw your thoughts in each of the bags:

Q1 What kind of stuff have you wasted?

Q2 Who or what does your waste affect?

Q3 Should you waste less?

Perhaps, before we can really think about these questions, we need to consider what we actually mean by WASTE.
The dictionary describes 'waste' as **something of no use or using something in a careless way.**
Do you agree with this definition?

How would you define and explain what waste is?

Chance to talk

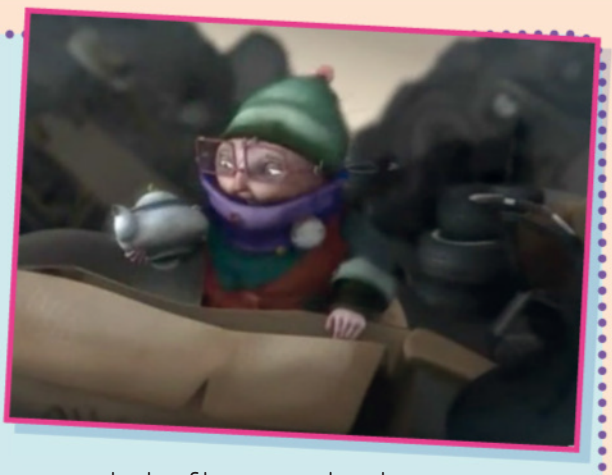
Can something of no use still be useful – or is that impossible?! There is a saying:

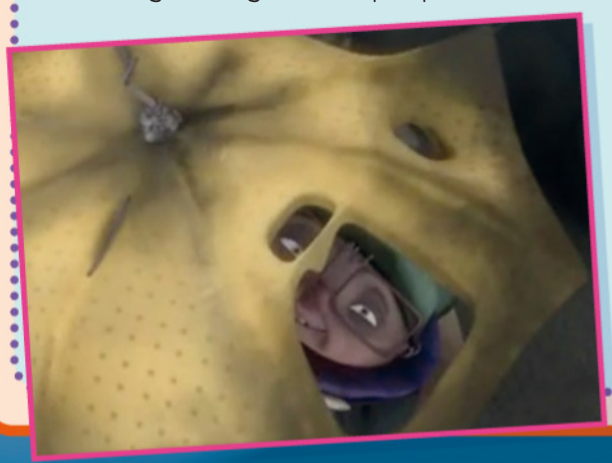
> **"One person's rubbish (waste) is another person's treasure."**

Can this be true? **Ask some family and friends what they think – jot down some notes in the outlines:**

WATCH TOGETHER

With permission from an adult, continue to challenge your thinking by watching a short film called **Treasure** by Chelsea Bartlett, which can be found on the Literacy Shed website: **https://www.literacyshed.com/treasure.html** You will see a character called Esther, a homeless woman, searching through other people's rubbish.





As you watch the film consider these questions:

1. **What kind of objects does Esther choose?**
2. **Should we all think the same things are 'rubbish'?**
3. **Is nothing rubbish if it is useful to someone else?**
4. **How would you describe the umbrella she finds?**

What would the world be like without waste? Is that even possible?

Possible ☐ Impossible ☐

I think the world without waste would be....

The problem is that all the while humans define something as 'waste,' they will continue to throw stuff away and that has a massive impact on the environment for years and years after the decision to bin it.

A project called **Archeoplastica** was started by a group of Italian environmentalists who decided to collect and exhibit old plastic products they had found on beaches and other places. They wanted to show that plastics can last decades (tens and tens of years). **Here is one of their photos where some objects have been found 30-50 years after they were thrown away.** The objects have been found since 2018 and are labelled with the year or decade that they are from.

DO YOU REALLY NEED IT?

Humans invented plastic but it has a far longer life than its inventors considered at the time. We can make choices about what we buy and we can try and buy less.

Mary Wollstonecraft by John Opie, c. 1797

An English philosopher called **Mary Wollstonecraft**, who was born in 1759 (over 250 years ago), was very interested in how people spent their money. She tried to encourage people to think hard about what they really needed before they made the decision to buy. If we buy less, then we waste less! So, reducing waste is not a new idea but it is one that we need to think creatively about, because there are now types of waste that Mary would never have imagined!

Final thoughts

For another philosophical story about waste, look in your local library (an environmentally friendly way of sharing books!) for: **The Paperbag Prince** by Colin Thompson.

The Paperbag Prince tells the story of an old man living on a rubbish dump; he believes that even rubbish can contain treasure and decides that if he stays long enough nature will heal and the green will return.

Modern philosophers engage in **Environmental Philosophy** to tackle the problems and challenges of the 21st Century. Its main aim is to protect the planet to allow it to recover and thrive in the future – your future. So, we must think about the resources that we use and the ones that we create. We must ask questions about the value of stuff versus the value of nature.

Thinking philosophically will help us think collaboratively and have difficult conversations in order to solve these problems – so keep talking and thinking because philosophy makes us question how we live.

♣ THINK CLUB

If you're reading this magazine then you are part of our thinking community. Tell us your ideas about how to protect our planet from the waste we create – you might even see your ideas in the next issue of Brilliant Brainz!

A Waste of Time?

By

By George Lyttle

Freddie Forbes gazed in awe at the platform in the packed school assembly hall. The headmaster marched on to the stage followed by the captains of the school soccer team and rugby side. Freddie watched enviously as each was presented with an honours blazer for their contribution to the school's sporting success over the previous year. When the next presentation of honours blazers would come around Freddie knew there was little hope that he would be the recipient of one of these treasured items of clothing.

'I wish you all a happy summer holiday,' the headmaster announced. 'Although most of you will be going away to sunnier parts there are others who will be staying nearer home. The local council has asked the school to undertake a project over the next six weeks to help clear up litter around the area and separate it for recycling. If anyone is interested, come to my office and you will be supplied with a litter picker, sacks and heavy-duty gloves.'

Freddie knew he would be at a loose end over the holiday so he went to the office along with four other boys to pick up the equipment needed to gather up the rubbish which littered the streets around the school. When he arrived home his mother looked at him curiously as he placed the implements on the kitchen table.

'What is this all about?' she asked with a smile on her face.

'Mum, I'm an average pupil and I'm not very good at sports,' he replied. 'This waste recycling is one way I can contribute to the good name of the school.'

'Just as long as you don't get fed up and stop half way through,' added Mum.

'I am determined to stick this out through thick and thin.' Freddie said confidently.

Over the next few weeks the other boys dropped out of the project leaving Freddie to toil alone. Day after day he picked up plastic bottles and cardboard hamburger cartons which local people discarded once they had finished with them. When he got home in the evening Freddie separated each type of waste into separate sacks before his father drove him to the recycling centre to deposit each lot into large containers.

Some of his friends laughed at him for undertaking something that seemed a never-ending chore, but he worked on regardless of their ridicule during the summer holiday.
The first day of the new school year soon arrived and once again the assembly hall was packed with expectant pupils waiting for the headmaster to arrive on the platform. When he appeared he was carrying a large frame containing a certificate which bore the logo of the local council.

'Welcome back,' he said. 'You will be wondering why this certificate is here. The council has presented this to the school in recognition of the sterling environmental work by one of our pupils. Freddie Forbes please come to the platform.'

Freddie nervously made his way to the front and climbed the steps up to the platform. The headmaster smiled at Freddie. "This certificate you have worked so hard to achieve will hang in the school office, but the governors have decided to give you a personal award too." A teacher came onto the stage bearing one of the honours blazers that Freddie had admired so much. The headmaster asked Freddie to remove his own blazer and he ceremoniously helped him into the blazer that he thought he would never wear. As the pupils who had dropped out looked on enviously Freddie knew that collecting waste was certainly not a waste of time.

The End

About the Author

The Silver Helmet

When the Godron and Calton clans, sworn enemies, are banished from a Viking settlement they settle in lands on either side of the Redron Sea. The Godron are a peaceful, hard-working people but are attacked regularly by the warlike Caltons. The Godrons have been promised that one day a warrior with mystical powers will come among them to deliver them from the tyranny of the Caltons. This is the story of that warrior.

George Lyttle lives in Belfast with his wife Lillian. He began writing for his grandchildren. His first novel ***The Silver Helmet*** received a silver award from Literary Titan.

Five of the Worst Songs in History! (maybe)

Music and waste are not a great fit, theme-wise. Composers and song writers don't tend to write music about waste! But waste can also be called rubbish. So, this is a list of five rubbish songs! (Bear in mind that this is subjective – which basically means one person's rubbish is another person's treasure – so some people might love, love, love these songs!)

Barbie Girl by Aqua. (1997)

This song was once voted as **the worst song of the 90s** – the worst song in a whole ten years! The squeaky voices really get into your head!

aagh!

Tubthumping by Chumbawumba (1997)

1997 was a bad year for songs – or a good **year for bad songs!** Tubthumping is a real marmite song (you either love it or hate it). It was the band's most successful song in terms of sales but lots of people find it really annoying – and even the band admit that it's not their best!

Agadoo by Black Lace (1984)

This has to be one of the most boring songs ever written! In 2003, a panel of music writers for Q magazine voted "Agadoo" as **the worst song of all time.**

Big Yellow Taxi - cover by Counting Crows

The Counting Crows have made some great songs – just listen to Mr. Jones, but **this cover version of Joni Mitchell's famous song was a big mistake.** (It's not easy to cover an iconic song – everyone will have an opinion!)

Jenny from the Block by Jennifer Lopez (2002)

Proof that even super successful musicians **can sometimes make mistakes** – many people feel that the lyrics in this song are laughable – but not all agree – and the song did sell lots of records.

Have a listen and see whether you love (or hate!) them.

Retired AND ALIVE

Childish Gambino

Childish Gambino is a stage name used by Donald Glover, who is also a famous actor and comedian. He started using the moniker Childish Gambino in 2008 to start his career as a musician. His music often has a serious message. His hit ***This Is America*** was a commentary on serious social issues and gun violence in the States and his song ***Feels Like Summer*** sounds like a feel good summer song, but the lyrics carry another serious message about the climate crisis:

"Every day gets hotter than the one before
Running out of water, it's about to go down"

Invented: 2008
Retiredf: 2017

Donald Glover retired the name Childish Gambino in 2017. (Although just a few days ago he announced that CG might make a return!)

EWatson92commons.wikimedia.com

Joni Mitchell

Roberta Joan 'Joni' Mitchell is a Canadian-American musician, producer, and painter. She started as a folk singer in the 1960s, later her music was also influenced by jazz and pop. Her song *Big Yellow Taxi* (1970) was ahead of its time in its environmental message and is widely used as a protest song about climate change. The lyrics; ***'they paved paradise to put up a parking lot'*** were written about her first time in Hawaii, when she ***"threw back the curtains and saw these beautiful green mountains in the distance. Then, I looked down and there was a parking lot as far as the eye could see. It broke my heart."***

Born: 1943

linktree/jonimitchel

Joni's fourth album Blue is widely thought to be one of the best albums of all time.

Leftover Turnovers

These turnovers are so very moreish that you will not leave a crumb on your plate, and the planet will thank you. This is a great way of using up any leftovers from supper time. You can fill your turnovers with anything - veg, meat or fruit. We used cooked leftover spinach and added onion and grated parmesan cheese. Alternatively, you can use any left-over fruit such as berries and bananas. Go to it, ECO Chefs!

POTATO PASTRY INGREDIENTS:

Makes 4 or 5

- 275g potatoes or leftover mash or boiled spuds
- 80g plain flour (extra for dusting)
- 40g Butter
- Milk if needed (or dairy free alternative)
- 1tsp of nutmeg (if using a savoury filling)
- 1 tsp of cinnamon (if using a sweet filling)

If using uncooked potatoes peel the spuds, chop into bit size chunks, place in a saucepan and cover with water. (Don't overfill the saucepan or it will be harder to empty). Bring to the boil and cook until soft, using a knife to prod them until they are done.

BE CAREFUL:

You may like to ask a grown up to help with draining off the water.

WHAT TO DO:

1. Thoroughly mash the potatoes removing all the lumps (try and make it as lump free as possible).
2. Cut the butter into chunks and place the flour into a bowl. Add your cinnamon or nutmeg.
3. Rub the butter into the flour with the tips of your fingers until the mixture resembles breadcrumbs.
4. When your mash has cooled, add it all together into the dough, using your hands to squeeze the mixture together. If the mixture is dry add a tsp of milk at a time or add a little more flour if the mixture is too wet.

5 Once it is all mixed in, gently roll it into a ball. Cover your pastry and allow it to rest in the fridge for 30 minutes before using.

6 Heat the oven, then flour the kitchen work surface. Very lightly (do not over handle the dough) roll out your dough and cut into rectangular shapes.

7 Add your leftover filling onto one side of your rectangle shape leaving a 1cm border, brush the border with milk and fold over the empty side of the rectangle.

8 Using a fork, crimp around the edge to seal the filling in place.

9 Make a small hole at the top of each turnover to allow the steam to escape and brush the tops of the turnovers with milk.

10 Place on a lined baking sheet and cook in a moderate (160c) for 20/25 minutes or until golden.

WHAT IS AVAXHOME?

AVAXHOME–

the biggest Internet portal, providing you various content: brand new books, trending movies, fresh magazines, hot games, recent software, latest music releases.

Unlimited satisfaction one low price
Cheap constant access to piping hot media
Protect your downloadings from Big brother
Safer, than torrent-trackers

18 years of seamless operation and our users' satisfaction

All languages
Brand new content
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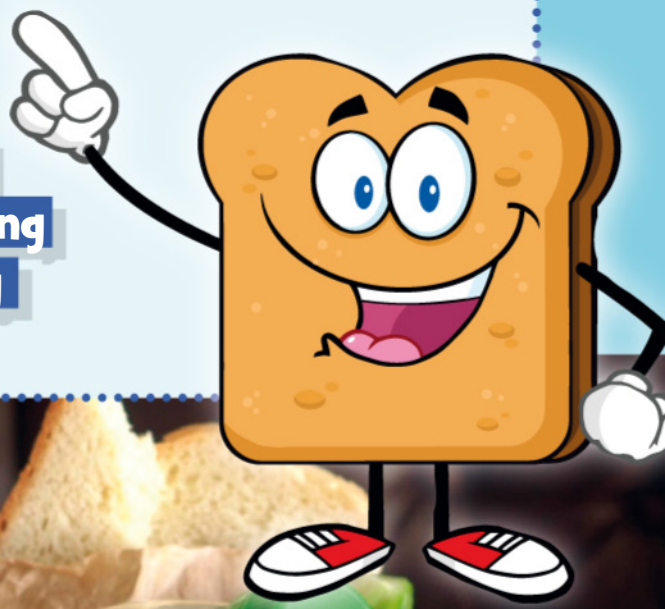
AvaxHome - Your End Place

We have everything for all of your needs. Just open https://avxlive.icu

Waste Not, Want Not

It is better to eat up or re-use your food than allow it to end up in a landfill site where it will gradually go all smelly and rotten and create a nasty gas called methane; a greenhouse gas polluting our beautiful planet. Methane lingers for up to 12 years and traps heat from the sun. This is something we can all help with at home. Growing all the plants and rearing all the animals we eat uses a lot of precious energy resources, like huge quantities of water.

For example, throwing away 1kg of beef is equivalent to throwing away 50,000 litres of water and pouring a cup of milk away is like wasting 1,000 litres of water.



The Most Wasted Foods

1	BREAD:	Over 200 million slices of bread chucked away in a year
2	MILK:	5.9 million glasses of milk wasted!
3	POTATOES:	left to go green and mouldy 5.8 million
4	APPLES:	1.3 million plus. put in the bin every year

Help to save on food waste, freeze for later or make a tasty meal from leftovers.

BREAD:

Keep it in the freezer or make a **delicious bread and butter pudding. Or breadcrumbs or eggy bread**: dip bread slices in whisked eggs, cinnamon and sugar and fry in a shallow pan then serve with berries and a spoonful of yoghurt.

MILK:

Makes for a **gorgeous smoothie** or **scrumptious rice pudding.**

POTATOES:

Store them in the dark in a paper bag or cotton bag not in plastic where they tend to sweat and go off faster. **Potato pancakes, gnocchi and potato pastry!**

Roast them, mash them, and stick them in the freezer

APPLES:

Like to be stored in a cool dry and dark place, or **chop and freeze to use later**.

WHAt ROt?

How do we go from leaves falling from the trees in autumn to soil in the spring? What breaks down plants, how does it work, and why is it important?

What is decomposition?

When plants lose their leaves, or die, the dead stuff ends up on the ground. From there it goes through a complex journey involving worms, slugs, snails, and a whole array of fungi and bacteria to end up as… soil. And that soil can used to grow more plants, which can then die and fall to the floor, which can turn into soil, and… well, you get the picture.

Decomposition processes

There are lots of steps that happen between a leaf falling on the ground, and that leaf becoming new soil. One of the first processes is **leaching**, where rainwater drip, drip, drips through the dead matter, sweeping away some of the chemicals. There is also **fragmentation**. This is where all the little critters in the soil, such as earthworms, chomp the dead material into smaller chunks. This is important because it gives lots of area for the stars of decomposition, bacteria and fungi, to grow.

The bacteria and fungi release special chemicals called **enzymes** into the dead matter. These enzymes then digest the material, a bit like how bacteria in our stomach and intestines help us digest our food. Then, some of this digested material is absorbed by the bacteria and fungus, with some being directly mixed in with the soil.

As the process continues the dead matter is broken into smaller and smaller, and simpler and simpler pieces, and mixed in with other soil particles to form a material called **humus**. This is definitely *not* the sort of hummus that you want to dip a cracker in, but it is very good for plants to dip their roots in!

What if decomposition didn't happen?

A typical wood might produce about half a kilogram of dead leaves and wood for every square metre in a year. That doesn't sound like much. But if you had a small wood about the size of a tennis court (about 200 square metres) that would make 100 kg of dead stuff in just one year! Imagine if that material sat there year on year, piling up. Very quickly, there would be no nutrients left in the soil for the living plants, and the ground would be buried in dead wood and leaves!

Scrap salad

You might have tried growing vegetables from seeds. But have you ever tried using vegetable scraps to grow new veggies?

YOU WILL NEED:

- clear containers
- vegetable scraps – lettuce, celery, and spring onions all work well
- kitchen knife
- chopping board
- water

Safety note: You'll be using a sharp knife in this experiment. Make sure you have an adult to supervise.

1. Cut the bottom off your vegetable a few centimetres above the base.

2. Place the cut-off section in a small container, and fill the bottom with water. Make sure the water doesn't cover the top of the cutting. Place in a sunny spot.

3. Check on your plant every day, and top up or refresh the water when needed. Trim off any brown leaves.

4. Within a couple of weeks you should have new vegetables growing. Chop off and enjoy!

WHAT'S THE SCIENCE?

Plants grow using a process called photosynthesis. Photosynthesis needs air, water, and sunlight to work. In this experiment you are providing all these elements for photosynthesis to happen and plants to grow!

If you want plants to continue growing they will also need some extra nutrients. When plants are grown in water like in this experiment (called hydroponic farming) then extra nutrients are added to the water. Alternatively, you can transfer them to a small pot with some soil once they have started growing.

You can grow lots of different vegetables from kitchen scraps. You can try growing carrots (you will need to transfer the plants to a pot with soil once the green shoots are a few centimetres tall), herbs (take a cutting, place it in water for a few weeks until it has roots, then transfer it to soil), and even pineapples! But you will have to be very patient – it can take a few years to regrow a pineapple!

LOOKING AFTER THE ENVIRONMENT: EGGS-CELLENT RESULTS!

Your breakfast egg might just be the key to filtering salt and microplastics from seawater. Researchers from Princeton University have made a special kind of material, called an aerogel, using egg whites. This material can remove almost all the salt and microplastics from seawater.

An **aerogel** is a very lightweight material with lots of tiny holes in it. Professor Craig Arnold, who led the research, describes it as like 'freezing a soapbubble'. Aerogels are great materials for lots of applications including insulation, energy storage, and water filtration.

One day, while eating his sandwich, Craig noticed that bread looks a bit like an aerogel. So, he and his team started baking bread with added carbon, and trying to turn it into an aerogel. They kept removing ingredients to try different recipes. Eventually they were left with just egg whites, and a really good aerogel!

They made the aerogel by freeze-drying the egg whites to get rid of the water. Then they heated it up to a really high temperature, without any oxygen around. Just like when you cook an egg white and it turns from clear to white, the protein structure changed. This process left them with the porous, open structure of an aerogel.

The egg white aerogel works by having different sized holes. There are tiny holes which trap the bad stuff (such as salt, microplastics, or bacteria), and big holes which let the water through. This allows it to filter water effectively. The filters only need gravity for them to operate, and don't waste any water. They are also relatively cheap to make, and perform far better than other similar products.

While egg whites are great for these filters, the team don't want to compete with food requirements. So they have been testing other similar proteins, and have been getting similar results. The next steps are to do more tests and refine the making process. One day, you might find yourself using a water filter inspired by eggs!

SPORT NEWS

2023 UK ATHLETICS INDOOR CHAMPIONSHIPS

18 - 19TH February

The UK's top track and field athletes will head to Birmingham for the 2023 UK Athletics Indoor Championships. Places for the European Indoor Championships in a month's time, are up for grabs.

CARABAO CUP FINAL

26th February (Wembley)

The first domestic football cup this year. This cup has become more important to teams than it used to be, so it fiercely contested in a great day out at a packed Wembley Stadium.

ALL ENGLAND OPEN BADMINTON CHAMPIONSHIPS

14th - 19th March (Birmingham)

It's the world's oldest badminton tournament and will feature the very best from the both the men's and women's game.

HORSE RACING: CHELTENHAM FESTIVAL

14TH - 17TH March

Famous for its atmosphere and the 'Cheltenham Roar', made as the starter raises the tape to start the first race, this is one of the country's biggest race meets. The big race is the Gold Cup on Friday.

WASTE

If you've been to a live sporting event, you'll know that there is an awful lot of waste created. This is mainly from spectators consuming food and drink. The world of sport knows, just like everybody else, that it must do it's best to cut back on the amount of waste it produces.

Here are four things being done by sporting venues to tackle waste:

1. Many football grounds and other sport stadiums have **a ban on plastic straws, stirrers, cutlery and all disposable packaging.**
2. In 2018 in the USA Adidas and the MLS made **special kits made out of Parley Ocean Plastic.** This is a material made from plastic waste found on beaches
3. At Twickenham fans are charged an extra £1 for their first drink. **They get that money back if they bring the cup back.**
4. The 974 Stadium in Qatar was made of 974 shipping containers that building tools were transported in. It saved on construction waste and water and was dismantled after the World Cup.

Keep Fit for FREE! (and save on waste)

If you're looking for a way to get in shape and stay healthy, then why not create the perfect outdoor workout from unwanted items around the house? Not only will this enable you to get fit and strong from the comfort of your own home, but you'll help save the planet - and money too.

Here are a few ideas:

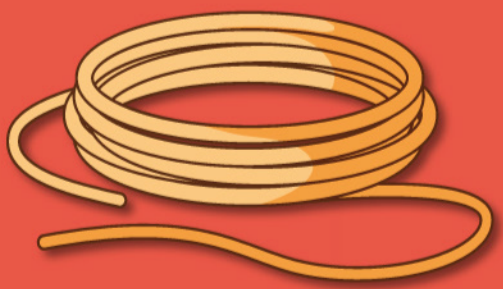
Station 1 - Chest pulls

You will need: An old pair of leggings or tights

Muscles worked: Chest, arms and shoulders

1. Hold each end of your leggings/tights with your arms out in front of you at chest height.
2. From here open your arms as wide as possible whilst pulling on the ends of the tights.

Do 15 reps



Station 2 - Skipping

You will need: An old piece of rope

Muscles worked: Heart, lungs, shoulders, arms, calves and core

Find an old piece of rope, create two knots in the end and skip. Fling the rope over your head, then jump over it as it rotates back around.

Do as many jumps as you can in 60 seconds.

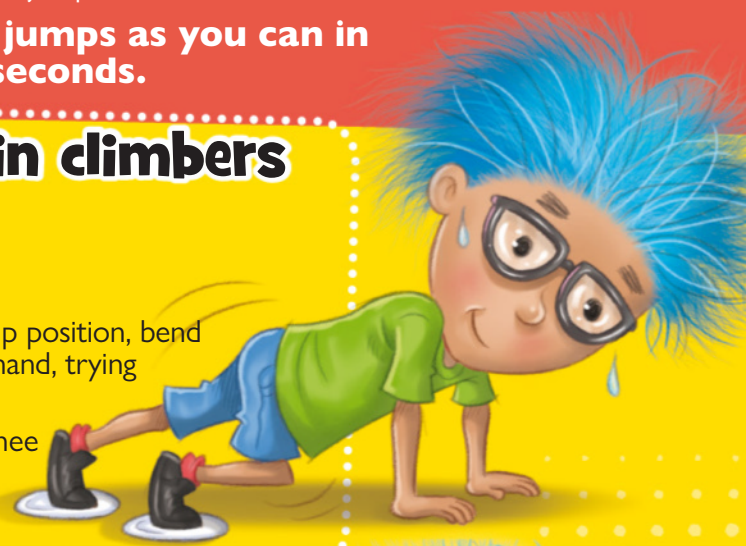
Station 3 - Gliding mountain climbers

You will need: Two paper plates

Muscles worked: shoulders, arms, core and legs

1. With your feet on the plates and your body in a press-up position, bend your left knee and slide your foot up towards your left hand, trying to bring your knee as close to your arm as you can.
2. Slide your left leg back to start as you slide the right knee up towards your right arm.

Repeat for 30 seconds.



Can you think of other ways to use old stuff to help you get fit?

Maybe an assault course made of old boxes?

Don't Waste Your Energy!

Have you ever noticed how negative feelings and thoughts can zap your energy and mood? This is a waste of your energy.

What can you do to stop this waste?

1 NOTICE

Firstly, get into the habit of regularly noticing your thoughts rather than letting them control your feelings without you even realising. **You don't have to believe or respond to them, just noticing them is very useful.**

2 CHALLENGE

Next, challenge to see if they are true and a good use of your energy or if they are wasting your energy and preventing you from doing something else.

3 CHANGE

Now think how you can change your thoughts to boost your energy, rather than waste it. For example, think about focusing your thoughts on how to solve the problem or difficult situation you are facing rather than telling yourself off about it. It's sometimes useful to think about how you might encourage a friend in your situation and use those words for yourself.

The more you do this, the more it will become an automatic habit. It is a simple way to save your mental energy for more useful things!

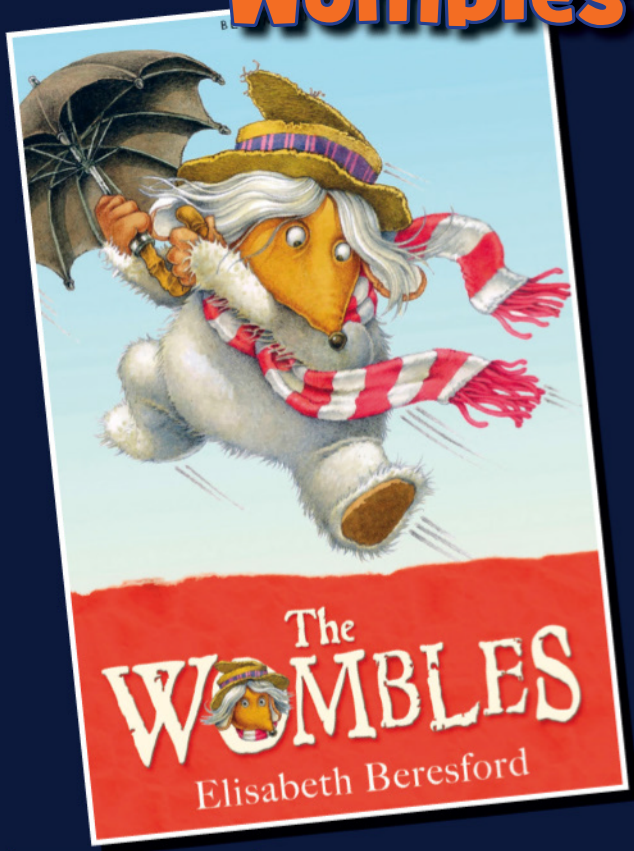
READING CORNER

A strange, furry clan who hide away under Wimbledon Common.

And a family of tiny people living beneath a grandfather clock.

Both have a talent for recycling. But who wins the prize for sustainability? It's time for The Great Green Wombles Vs Borrowers Slamdown!

Wombles Vs Borrowers



The Wombles

Elizabeth Beresford - Bloomsbury - £6.99

Elizabeth Beresford's Wombles might share the Borrowers' fondness for keeping out of sight of humans (good thinking if you ask me, we'd probably try to eat them) but that's where the similarity ends. Can you imagine the disapproving looks from Great Uncle Bulgaria if Tobermory came back to the burrow with something he'd nicked while nobody was looking? He'd never stand for such unacceptable behaviour from a young womble! Wombles aren't thieves, they're the real deal; recycling heroes who only ever take the things that we humans foolishly throw away.

The Complete Borrowers

Mary Norton - Puffin - £9.99)

Mary Norton's much-loved novel The Borrowers introduces us to the Clock family, Pod and Homily, and their daughter Arietty. The mouse-sized Clocks go unnoticed by the humans whose house they share. The food and other items that they 'borrow' to survive mean little to their gigantic neighbours… At least, that's what they want you to believe! Let's be honest. If a Borrower borrows something of yours, you're not getting it back. They should probably be called Takers. They may be very good at repurposing the things they yoink off the 'big people' but it's not so much recycling as it is daylight robbery!

WINNER

The Wombles. These hairy tree-huggers were ahead of their time when they made their debut in the 1960s, and they could still teach humans a thing or two today!

Both are excellent books that deserve their reputation as children's classics. Give them a go. And don't forget to recycle!

Building a Better World

Moving towards a cleaner, more sustainable world means changing more than just the fuel that we use. Worldwide, building is responsible for about a third of all carbon emissions, so the race is on to find new materials and new ways to build. Here are just a few of the clever ways that recycling and new 'green materials' are helping with the problem…

Reclaimed Bricks

Okay, there's nothing new about clay bricks. This building material has been around for at least 9000 years! **But did you know that an ordinary brick can last 500 years?** That makes them ideal for reuse, which saves all of the energy required to make new bricks. Plus, broken bricks can be ground down to use in concrete, or as sand, which is another precious resource needed for building.

Plant-Based Insulation

A lot of the heat in our homes leaks out through badly insulated walls and roofs. (This is something you might have heard the grown-ups moaning about this winter!) Traditional insulation, made from oil-based plastics, is giving way to new kinds of plant-based insulation, made from plants like kelp (a kind of seaweed) and bamboo to create sustainable alternatives.

Bamboo Boom!

Speaking of bamboo, this fast-growing member of the grass family is one of the most sustainable materials there is. It's incredibly strong and versatile. **And now builders are finding all sorts of new ways to use it, from flooring to super-hard bamboo-reinforced concrete!**

HEMPCRETE

Just as bamboo was getting comfy on the sustainability throne, along comes hemp, the fibrous, fast-growing plant that could be a big part of the climate solution. **8% of global emissions come from the manufacture of concrete**. But hempcrete, which is made from the fibers of the plant mixed with lime (the mineral, not the fruit) isn't just carbon neutral, it's carbon negative! **That means for every building constructed with hempcrete, we're actually taking carbon out of the atmosphere!**

RECYCLED TYRES

There are tons of uses for old tyres. Some people even build entire homes out of them. **'Earthships' are a kind of environmentally friendly house built from recycled and natural materials.** Their walls are often made from old tyres filled with hempcrete. Shredded tyres are also used in roads and pavements. Plus, old tyres make terrific swings in case you didn't know!

WHAT ABOUT WINDMILLS?

Wind turbines are an important part of our move to clean energy. But their huge blades are built from fiberglass; a mixture of plastic with glass fibers that is extremely tough, but hard to recycle. The lifespan of a turbine blade is about 25 years, so while some companies work on new ways to recycle old blades, others are investigating new materials so that future turbine blades can be more easily recycled.

Using recycled and green materials in our buildings isn't always easy or cheap, but that will change as new techniques and new materials are rolled out. **It will be interesting to see how these new ways of building shape the towns and cities of the future.**

Will we one day find ourselves living in 100% plant-based skyscrapers?

You never know!

BRAINZ FOR CHANGE

Don't Waste an Opportunity

The UK produces a staggering amount of household rubbish or waste every year. The latest figures estimate we discard 26,000,000 tonnes of 'stuff'.

To put that in perspective, that is the equivalent weight of 4.3 million adult male African elephants or 2.16 million double-decker buses or 141,689 Boeing 747 jumbo jets! Imagine that lot all piled up!

Household waste is everything we put into our rubbish bins. It includes empty plastic bottles and food containers, plastic bags, cardboard boxes, nappy bags, newspapers, magazines, dog poo bags, and so on. What a stinky stack it would be!

So, although things like cardboard boxes and plastic and glass bottles are recycled, the rest goes into landfill. You might have seen (and smelt) landfill sites – they're the huge rubbish dumps on the edge of many towns and cities in the UK. All of that stuff that goes into landfill will take decades, if not far longer, to rot down into the soil. (If you read last month's issue, you know how important soil is to every life form on Planet Earth).

But here's some good news:

IT IS POSSIBLE TO FIND WAYS TO RECYCLE MORE HOUSEHOLD WASTE. AND KIDS LIKE YOU ARE DOING IT EVERY DAY.

They see problems as opportunities to stretch their creative powers. In other words, they are using their brains to find clever solutions to some of the biggest challenges our planet is facing.

They want to reduce the amount of household waste their families produce so they do things like:

- Redecorate old plastic milk bottles and hang them in their garden as bird feeders
- Transform empty water bottles into piggy banks (saving the planet and money!)
- Cover old lightbulbs with paper and turn them into Halloween or Christmas tree decorations
- Use empty plastic food containers to grow plant seedlings.

Check out the website **www.wastewisekids.org** to see how kids like you use waste to create something special.

KIDS AGAINST PLASTIC

Talking of kids changing the world, take a look at the website **www.kidsagainstplastic.co.uk**. It is a charity set up by and run by kids (and some adults) to help people to learn about environmental issues such as plastic pollution and the climate crisis.

One of the team is Inaaya, a keen environmentalist who hosts a radio show once a fortnight and has appeared on TV to speak about cutting plastic use. She is also on a mission to make her school plastic free... because eliminating waste is never a waste of your time!

INAAYA Chief Voice Officer

RUBBISH JOKES

What do you call a group of baby rubbish bins?
~ A litter...

I tried playing frisbee with my dog the other day, but he was rubbish.
~ I guess I need a flatter dog!

What did the ship's cat use instead of a litter box?
~ The poop deck.

What cleans the floor and then comes back to you?
~ A broom-erang!

What do you call a belt made out of watches?
~ A waist of time!

I spent all my cash renting a limo and it didn't come with a driver.
~ Wasted all that money ...and nothing to chauffeur it.

I caught my mum going through the neighbour's bins...
~ She's not nosey, she's just terrible at parking!

Alison went to Jenny's fancy dress party with nothing but another girl riding piggyback.

"Er... what are you supposed to be?" Jenny asked.

"I'm a snail," Alison replied.

"That's rubbish! How can you be a snail when all you've got is a girl on your back?"

"That's not just any girl," Alison smiled, "that's Michelle!"

Dad says buying a vacuum cleaner was a waste of money...
~ Because all it's done is collected dust!

Why is it a waste to study history?
~ Because there is no future in it.

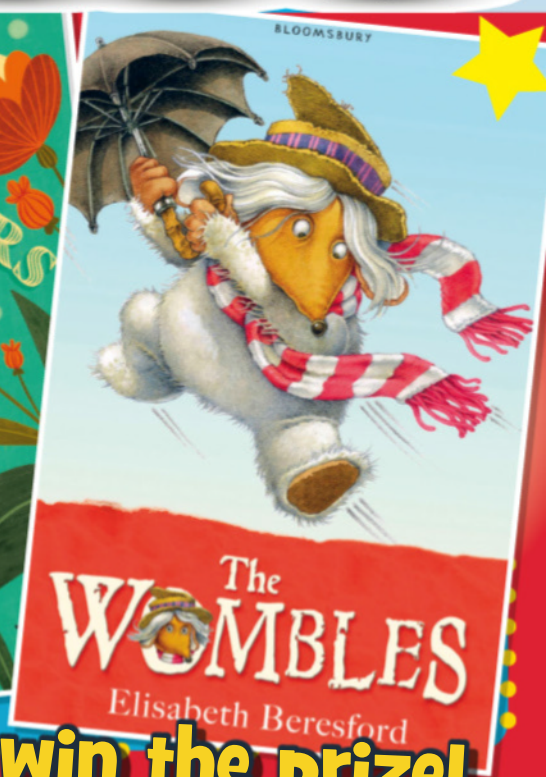
What's got four wheels, no wings, and flies?
~ A rubbish truck.

I tried to put a new bag in my bin, but it kept saying, "NO,NO,NO," and wouldn't go in...
~ It was a refuse sack.

WIN THESE

Write and tell us the ways in which you save on waste. Plus, send in a photo of you with your art, cooking or science experiment.

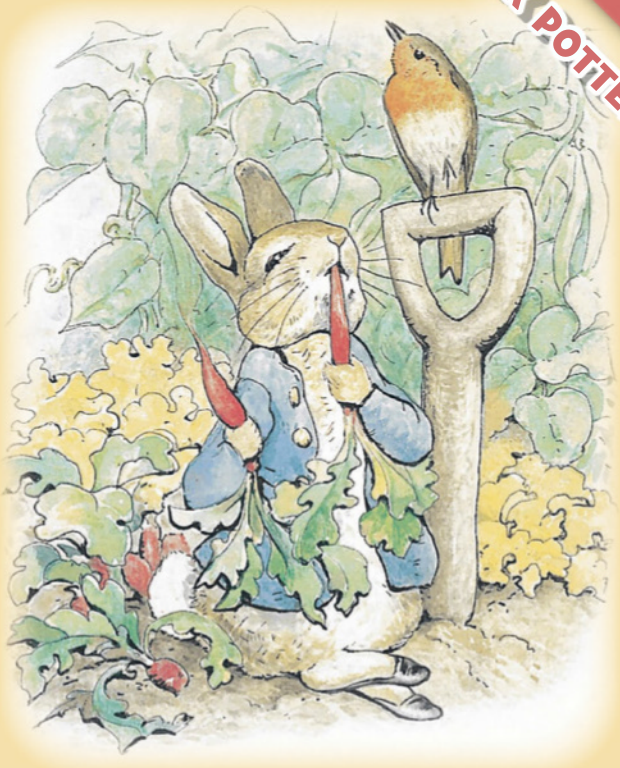
hello@brilliantbrainz.com

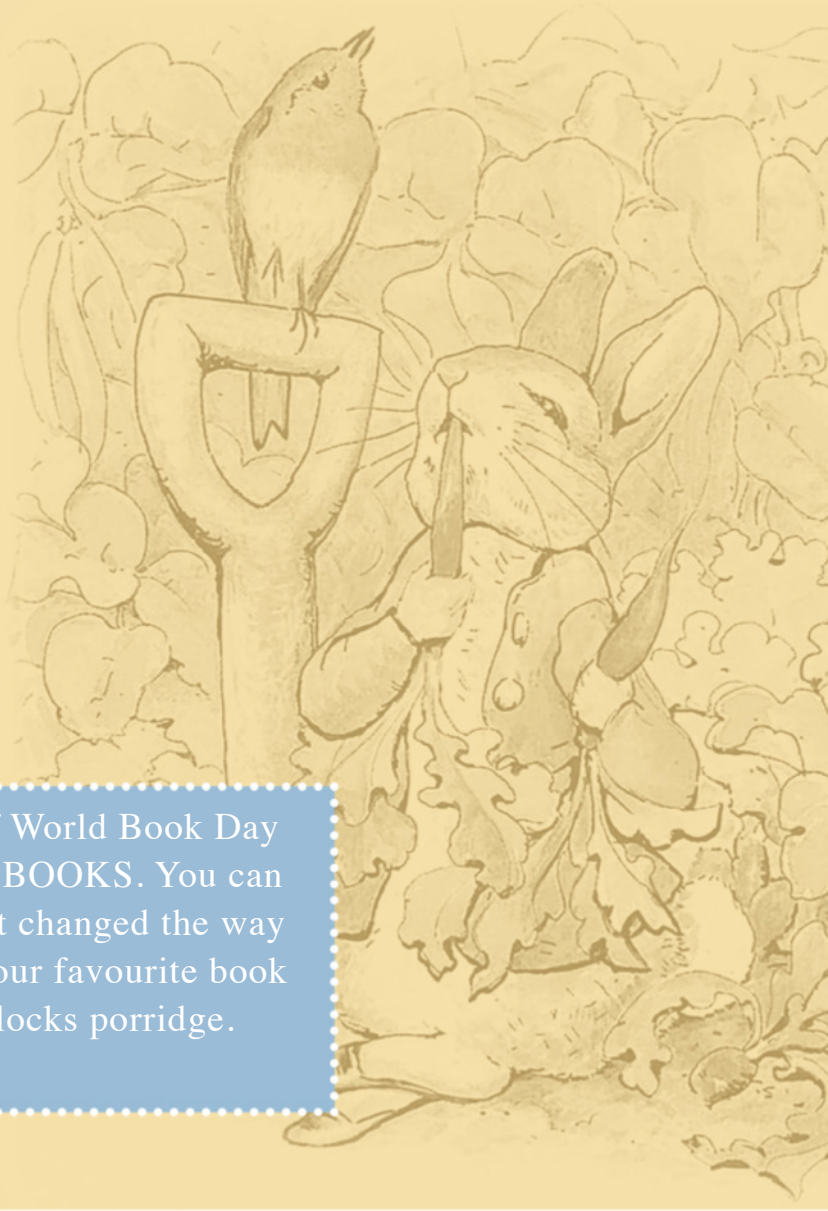


The letter of the month will win the prize!

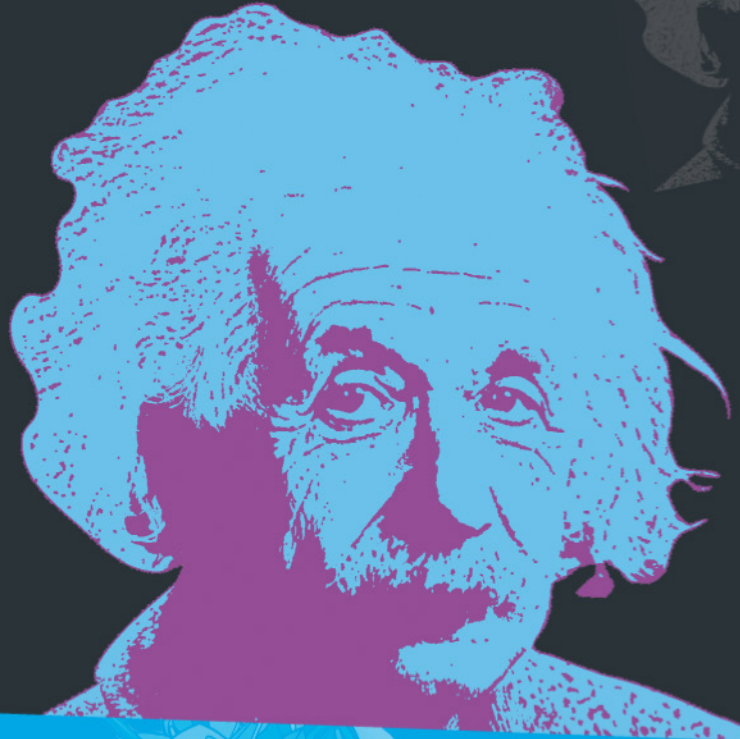
IN NEXT MONTH'S ISSUE

BEATRIX POTTER





Next month is March, the month of World Book Day and so we will be thinking about BOOKS. You can find out about some science books that changed the way we see the world, make a portrait of your favourite book character and rustle up some Goldilocks porridge.
See you then!



"Look deep into nature and then you will understand everything better. Learn from yesterday, live for today, hope for tomorrow."

Albert Einstein
Theoretical physicist

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